

## CLAIMS

What is claimed is:

1. A method for processing a sound signal, applied to a signal processing system including a signal receiving device, a signal recognizing device and a signal processing device, so as to eliminate background interference and process a sound source signal for the sound signal; the method comprising the steps of:
  - (1) receiving the sound signal containing the sound source signal and the background interference via the signal receiving device;
  - (2) distinguishing the sound signal into the sound source signal and the background interference via the signal recognizing device;
  - (3) eliminating the background interference and merely transferring the sound source signal via the signal recognizing device to the signal processing device; and
  - (4) processing and amplifying the sound source signal via the signal processing device.
2. The method of claim 1, wherein in the step (2), the signal recognizing device distinguishes the sound signal into the sound source signal and the background interference according to signal phase difference.
3. The method of claim 1, wherein in the step (2), the signal recognizing device distinguishes the sound signal into the sound source signal and the background interference according to difference in signal amplitude intensity.
4. The method of claim 1, wherein in the step (2), the signal recognizing device distinguishes the sound signal into the sound source signal and the background interference according to difference in frequency change caused by Doppler effect.
5. The method of claim 1, wherein in the step (2), the signal recognizing device

distinguishes the sound signal into the sound source signal and the background interference according to differences in signal phase, signal amplitude intensity, and frequency change caused by Doppler effect.

6. A method for processing a sound signal, applied to a signal processing system including a signal receiving device, a signal recognizing device and a signal processing device, so as to eliminate background interference and process a sound source signal for the sound signal; the method comprising the steps of:

- (1) adjusting the signal receiving device for selectively receiving the sound signal containing the sound source signal and the background interference from a certain direction via the signal receiving device;
- (2) distinguishing the sound signal into the sound source signal and the background interference via the signal recognizing device;
- (3) eliminating the background interference and merely transferring the sound source signal via the signal recognizing device to the signal processing device; and
- (4) processing and amplifying the sound source signal via the signal processing device.

7. The method of claim 6, wherein in the step (2), the signal recognizing device distinguishes the sound signal into the sound source signal and the background interference according to signal phase difference.
8. The method of claim 6, wherein in the step (2), the signal recognizing device distinguishes the sound signal into the sound source signal and the background interference according to difference in signal amplitude intensity.
9. The method of claim 6, wherein in the step (2), the signal recognizing device distinguishes the sound signal into the sound source signal and the background interference according to difference in frequency change caused by Doppler

effect.

10. The method of claim 6, wherein in the step (2), the signal recognizing device distinguishes the sound signal into the sound source signal and the background interference according to differences in signal phase, signal amplitude intensity, and frequency change caused by Doppler effect.

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